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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/591,662	09/05/2006	Karl Ott	295335US0PCT	3137
22850 7590 02/02/2011 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
GRESO, AARON J				
ART UNIT		PAPER NUMBER		
1763				
NOTIFICATION DATE		DELIVERY MODE		
02/02/2011		ELECTRONIC		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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### Office Action Summary

**Application No.**

10/591,662

**Applicant(s)**

OTT ET AL.

**Examiner**

AARON GRESO

**Art Unit**

1763

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 16 November 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-942)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

Any rejections and/or objections made in the previous Office Action and not repeated below, are hereby withdrawn.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. References previously cited are provided in a previous Office Action.

### ***Reopening***

In view of the Appeal Brief filed on 16 November 2010, PROSECUTION IS HEREBY REOPENED. New grounds of rejection are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

- (1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,
- (2) initiate a new appeal by filing a notice of appeal under 37 CFR 41.31 followed by an appeal brief under 37 CFR 41.37. The previously paid notice of appeal fee and appeal brief fee can be applied to the new appeal. If, however, the appeal fees set forth in 37 CFR 41.20 have been increased since they were previously paid, then appellant must pay the difference between the increased fees and the amount previously paid.

A Supervisory Patent Examiner (SPE) has approved of reopening prosecution by signing below:

/Milton I. Cano/

Supervisory Patent Examiner, Art Unit 1763.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 15-22, 24-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Pears et al. (WO 99/50362), as evidenced by Argabright (US 3,526,655).

As to Claims 15 and 25:

Pears et al. discloses making water dispersible polyurethanes (page 1 lines 23-34). Materials are indicated to be made in descriptive steps i) and ii) (page 1, lines 23-30, and pages 4-6); the method comprises (a) and (b) components, to make a water-dissipatable polyurethane (page 1 lines 23-24) indicated to be diisocyanates and OH containing materials respectively (page 2 lines 20-33).

The compositions comprise polyisocyanates or diisocyanates, modified polyisocyanates, modified isocyanates, and their mixtures (page 2 lines 8- 26), including those that are reacted with hydroxyl or primary or secondary amines (page 2 lines 27-33); modified isocyanates are indicated to comprise dimethylol propionic acid to facilitate water dispersing {taken as being hydrophilic} (page 3 lines 14-17).

Materials are to be mixed and reacted in a solvent until a isocyanate material is finished reacting with isocyanate reactive material (page 4 lines 29-34); a preferred solvent indicated for use in material preparation is N-ethyl-2-pyrrolidone (page 7 lines 30-31 and 35-36) {taken as 1-ethyl-2-pyrrolidone or N-ethylpyrrolidone (Official Notice);

as known and employed in the isocyanate art as or N-ethylpyrrolidone and as an aprotic solvent, as evidenced by Argabright (col 2 lines 55-71)} and is indicated to be placed into water in a ratio of water to solvent being more preferably 99:1 (page 8 lines 21-26) {the amount of solvent percent taken as being less when considering including reactive components in the composition}. The subsequent resultant materials are indicated to be mixed in a liquid indicated to be water (page 7 lines 3-9).

Further as to Claim 16 a):

Materials are reacted in an organic solvent indicated per step (i) (page 4 lines 17-18) with isocyanate materials and isocyanate reactive materials in a ratio of about 1.1 to 2 to 1; isocyanates indicated to be .

Further as to Claim 16 b):

Isocyanate reactive materials are indicated to be diols; the diols employed are indicated to have molecular weights of 3000 or 2000 and other diol materials employed are indicated to have molecular weights below 400 such as cylcohexyldimethanol {C<sub>8</sub>H<sub>16</sub>O<sub>2</sub> molecular weight of  $8 \times 12 + 16 \times 2 + 16 = 96 + 32 + 16 = 96 + 48 = 144$ } (page 4 lines 9-13).

Further as to Claim 16 c):

Materials employed are also indicated to be used for neutralizing carboxylic acid groups that are allowed to fully or partially neutralized with non-ionic materials indicated to be primary or secondary amines or polyols (page 3 lines 33-39).

Further as to Claims 16 d) and Claims 17-22:

Water dispersing group materials are also present (page 2 lines 34-40 and page 3-4 bridging paragraph and page 3 lines 8-11), that include carboxylic acid groups, indicated to be dimethylol propionic acid {addressing Claims 17-21}, or present in the form of a polyol or polyamine with such groups comprising a mixture of ionic or non-ionic groups {addressing Claim 22}.

Further as to Claim 16:

The example in Table 1 (page 10) is also taken as applicable to Claim 16 a), b), c), d) per the following:

Table 1 indicates a composition, comprising an isocyanate-reactive material form stage 1 (pages 9-10), reacted to form a terminated material comprising a material that is not the same as the materials employed to make the polyurethane prior to endcapping, comprising 1) isophorone diisocyanate [corresponding to 16 a)]; 2) propylene glycol (MW 1000) [40.56 g] [corresponding to b1)]; 3) dimethylol propionic acid MW 134.1 [6 g] [corresponding to 16 d)]; where diol material of 16b1) corresponds to 100%.

In regard to total diols including 16d) materials, the following applies:

Where the mole percentages of diol material apply as follows:

$$\{100 \times (40.56/1000) / (0.04056 + 0.04474)^*\} + \{100 \times (6/134.1) / (0.04056 + 0.04474)\}$$
$$= 100 \times 0.04056 / 0.0853 + 100 \times 0.04474 / 0.0853 = 47.55 \text{ mol\% polypropylene glycol} + 52.5\% \text{ dimethylol propionic acid} = 100\% \text{ diols with 16b2) materials being taken as zero.}$$

*\*[Molecular weights are per Official notice and readily recognized in the art]\**

Further as to Claim 24:

Materials are indicated to be printed onto textiles or paper (page 14 lines 29-32) {taken as coating small areas on paper}.

The reference discloses the limitations of the applicable Claims.

***Claim Rejections - 35 USC § 103***

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pears et al. (WO 99/50362) as evidenced by Argabright (US 3,526,655), and as applied to Claims 15-22, 24-25 above, in view of Bruchmann et al. (DE 101 61 156, citations refer to the English equivalent, US 2005/0043467).

Although Pears et al. suggests that n-ethyl 2-pyrrolidone, known in the art the art as an a-protic solvent {as evidenced by Argabright col 2 lines 55-71}, is employed for polyurethane preparation; and that catalysts, including organo-tin material and others "as known in the art" are employed in either step i) or ii) (Pears et al. page 4 lines 26-28); Pears et al. does not further indicate the employment of a cesium catalyst.

On the other hand, Bruchmann et al. teaches aqueous dispersions comprising a polyurethane (page 1 [0001]) composed of diisocyanates having 4 to 12 carbons (page 1 [0018]), diols of which 10 to 100 mol% have a molecular weight of from 500 to 5000 and 0 to 90 mol% gave a molecular weight of from 60 to 500 (page 1[0003]-[0005]), and monomers containing at least one isocyanate group or at least one isocyanate-reactive group and further carrying at least one hydrophilic group or potentially hydrophilic group (page 1 [0006]). The polyurethane is made by preparing polyurethane prepolymers, dispersing them in water, and then chain extending them with polyamines (page 4 [0058]).

Bruchmann et al. indicates that the cesium catalyst employed is employed during the reaction (page 1 [0009] and page 5 [0077]); the catalyst being deployed in water or an a-protic solvent (page 5 [0079]).

Bruchmann et al. also teaches that tin catalysts are toxic and should be avoided (page 1 [0012] and [0015]) while the reference further teaches that unwanted branching is avoided, and that the catalysts are easier to implement (page 6 [0099]).

Although Bruchmann et al. teach that additional solvent employed should be kept below 10% (page 5 [0085]), the amount of n-ethyl 2-pyrrolidone, suggested by Pears et al., is indicated to be as low as 1%.

It would have been obvious at the time of the invention, to have employed a non-toxic catalyst, such as a cerium salt as suggested by Bruchmann et al., instead of organo-tin material taught by Pears, to provide for easier to implement, safer compositions with less branching, in the compositions taught by Pears, ready for improvement, by employing cesium catalysts with the same application employing the same similar materials, with a reasonable expectation of success.

### ***Response to Arguments***

Applicant's arguments filed 16 November 2010 have been fully considered but are moot due to new grounds of rejection.



***Examiner Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AARON GRESO whose telephone number is (571)270-7337. The examiner can normally be reached on M-F 0730-1700.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 571 272 1398. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Milton I. Cano/  
Supervisory Patent Examiner, Art Unit 1763

/Aaron J. Greso/